

Serial No. 09/759,430

Docket No. HRT 228

1-13. (Cancelled)

14. (Currently Amended) A method for anastomosing a first hollow tissue structure to a second hollow tissue structure having an aperture opening, the method comprising the steps of:

providing an anastomosis device comprising a body having at least one opening, and at least one tissue securing element having a first end and a second end, the tissue securing element comprised of a material capable of being biased from an unbiased configuration to a biased configuration, the tissue securing element configured to be at least partially disposed within the at least one opening;

holding the at least one tissue securing element in the biased configuration in the at least one opening;

inserting at least the first end of the at least one tissue securing element through the aperture an opening in the a-second hollow tissue structure while the tissue securing element is in the biased configuration; and

permitting the tissue securing element to move from the biased configuration to the unbiased configuration such that the first end and the second end of the tissue securing element compress a portion of the end of a first hollow tissue structure and a portion of the second hollow tissue structure adjacent to the opening aperture.

15. (Currently Amended) The method of claim 14, wherein the first end of the tissue securing element does not penetrate through the inner-wall of the second hollow tissue structure when the tissue securing element is permitted to move from the biased configuration to in the unbiased configuration.

16. (Currently Amended) The method of claim 14, wherein the first end of the tissue securing element is permitted to assume the unbiased configuration prior to the second end of the tissue securing element being permitted to assume the unbiased configuration.

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17. (New) The method of claim 14, wherein the first hollow tissue structure is a vascular conduit and the second hollow body structure is an aorta.

18. (Original) The method of claim 14, wherein the anastomosis device comprises a hub having at least one opening sized to receive a portion of the tissue securing element and comprising the step of passing the second end of the tissue securing element through the first hollow tissue structure and through the at least one opening of the hub.

19. (Currently Amended) The method of claim 14, wherein the permitting step is performed such that the first end and the second end of the tissue securing element compress a portion of the end of a first hollow tissue structure and a portion of the second hollow tissue structure adjacent to the ~~opening aperture~~ between the first end and the second end.

20. (Original) The method of claim 14, comprising everting the end of the first hollow tissue structure.

21. (Original) The method of claim 20, wherein the everting step is performed prior to the inserting step.

22. (Original) The method of claim 20, wherein the everting step comprises everting the end of the hollow tissue structure approximately 90 degrees.

23. (Original) The method of claim 20, wherein the everting step comprises everting the end of the hollow tissue structure less than 90 degrees.

24. (Original) The method of claim 20, wherein the everting step comprises everting the end of the hollow tissue structure greater than 90 degrees.

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25. (Currently Amended) The method of claim 20, wherein the permitting step is performed such that the first end and the second end of the tissue securing element compress a portion of the everted end of the first hollow tissue structure and a portion of the second hollow tissue structure adjacent to the opening aperture between the first end and the second end.

26. (Original) The method of claim 25, wherein the permitting step comprises compressing the inner surface of the portion of the everted end of the first hollow tissue against the outer surface of the second hollow tissue structure.

27. (Original) The method of claim 20, wherein the inserting step comprises inserting the first end of the tissue securing element through the everted end from an exterior surface of the first hollow tissue structure toward an interior surface of the first hollow tissue structure.

28. (Original) The method of claim 27, wherein the anastomosis device comprises a hub having a bore sized to receive a portion of the first hollow tissue structure, and comprising the step of passing the first hollow tissue structure through the bore.

29. (Currently Amended) The method of claim 28, wherein the step of permitting the tissue securing element to move from the biased configuration to the unbiased configuration causes the first end and the second end of the tissue securing element to compress the portion of the end of a first hollow tissue structure, the hub and the portion of the second hollow tissue structure adjacent to the opening aperture.

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30. (Currently Amended) A method for anastomosing a first hollow tissue structure to a second hollow tissue structure having an opening aperture, the method comprising the steps of:

- providing an anastomosis device comprising a body having at least one opening, and at least one tissue securing element having a first end and a second end, at least a portion of the tissue securing element comprised of a material capable of being biased from an unbiased configuration to a biased configuration, the tissue securing element configured to be at least partially disposed within the at least one opening;
- holding at least a portion of the at least one tissue securing element in the biased configuration in the at least one opening;
- inserting at least the first end of the at least one tissue securing element through an opening aperture in a second hollow tissue structure while the at least a portion of the tissue securing element is in the biased configuration;
- permitting the at least a portion of the tissue securing element to move from the biased configuration to the unbiased configuration such that the first end and the second end of the tissue securing element compress a portion of the end of a first hollow tissue structure and a portion of the second hollow tissue structure.

31. (New) A method for anastomosing a first hollow tissue structure to a second hollow tissue structure having an aperture, the method comprising the steps of:

- providing an anastomosis device comprising at least one tissue securing element having a first end and a second end, the tissue securing element comprised of a material capable of being biased from an unbiased configuration to a biased configuration,
- holding the at least one tissue securing element in the biased configuration;
- inserting at least the first end of the at least one tissue securing element through an aperture in a second hollow tissue structure while the tissue securing element is in the biased configuration;

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permitting the tissue securing element to move from the biased configuration to the unbiased configuration such that the first end and the second end of the tissue securing element compress a portion of the end of a first hollow tissue structure and a portion of the second hollow tissue structure adjacent to the aperture, at which time the first end of the tissue securing element does not penetrate through the wall of the second hollow tissue structure.

32. (New) The method of claim 31, wherein the first end of the tissue securing element does not pierce the inner wall of the second hollow tissue structure

33. (New) A method for anastomosing a first hollow tissue structure to a second hollow tissue structure having an aperture, the method comprising the steps of:

providing an anastomosis device comprising at least one tissue securing element having a first end and a second end, the tissue securing element comprised of a material capable of being biased from an unbiased configuration to a biased configuration,

holding the at least one tissue securing element in the biased configuration;

inserting at least the first end of the at least one tissue securing element through an aperture in a second hollow tissue structure while the tissue securing element is in the biased configuration;

permitting the tissue securing element to move from the biased configuration to the unbiased configuration such that the first end and the second end of the tissue securing element compress a portion of the end of a first hollow tissue structure and a portion of the second hollow tissue structure adjacent to the aperture, wherein the first end of the tissue securing element is permitted to assume the unbiased configuration prior to the second end of the tissue securing element being permitted to assume the unbiased configuration.

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34. (New) A method for anastomosing a first hollow tissue structure to a second hollow tissue structure having an aperture, the method comprising the steps of:

providing an anastomosis device comprising a hub having at least one opening sized to receive a portion of the tissue securing element, and at least one tissue securing element having a first end and a second end, the tissue securing element comprised of a material capable of being biased from an unbiased configuration to a biased configuration;

holding the at least one tissue securing element in the biased configuration;

everting the end of the first hollow tissue structure;

passing the second end of the tissue securing element through the first hollow tissue structure and through the at least one opening of the hub;

inserting at least the first end of the at least one tissue securing element through an aperture in a second hollow tissue structure while the tissue securing element is in the biased configuration;

permitting the tissue securing element to move from the biased configuration to the unbiased configuration such that the first end and the second end of the tissue securing element compress a portion of the end of a first hollow tissue structure and a portion of the second hollow tissue structure adjacent to the aperture.

35. (New) A method for anastomosing a first hollow tissue structure to a second hollow tissue structure having an aperture, the method comprising the steps of:

providing an anastomosis device comprising at least one tissue securing element having a first end and a second end, the tissue securing element comprised of a material capable of being biased from an unbiased configuration to a biased configuration;

holding the at least one tissue securing element in the biased configuration;

everting the end of the first hollow tissue structure;

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inserting at least the first end of the at least one tissue securing element through an aperture in a second hollow tissue structure while the tissue securing element is in the biased configuration;

permitting the tissue securing element to move from the biased configuration to the unbiased configuration such that the first end and the second end of the tissue securing element compress an inner surface of the everted end of the first hollow tissue structure and an outer surface of the second hollow tissue structure adjacent to the aperture.

36. (New) The method of claim 14, wherein the body is a sleeve.

37. (New) The method of claim 14, wherein the body has a distal end and comprises a plurality of barbs at its distal end for engaging the first hollow tissue structure.